

WHAT IS CLAIMED IS:

*Sub A1*

1. A CDMA receiver for applying despread processing to direct wave or delayed waves that arrive via each path of multiple paths, applying synchronous detection processing to the despread signals obtained, combining the detection signals of respective paths and discriminating the received data on the basis of the combined signal, comprising:
  - a weighting unit provided for each path, wherein if a prescribed signal component of a direct wave or delayed wave that arrives via an assigned path is below a set level (breakpoint level), said weighting unit applies weighting, which conforms to the level of said signal component, to an output signal;
  - a combiner for combining signals output from the weighting units of each of the paths; and
  - a data discriminating unit for discriminating received data based upon the output signal of the combiner.
2. A CDMA receiver according to claim 1, wherein the weighting unit adopts 1 as a weighting coefficient if said signal component is greater than a set level.
3. A CDMA receiver according to claim 1, wherein  $M^{-N}$  is adopted as a weighting coefficient and the smaller said signal component becomes in comparison with the set level, the larger N is made.
4. A CDMA receiver according to claim 1, wherein when reception power is adopted as said signal component,

said weighting unit averages pilot signals, which are contained in the received signal, over one or more slots, calculates reception power using the average value, decides a weighting coefficient based upon a difference or ratio between said reception power and a set power, which is said set level, and weights the output signal.

5. A CDMA receiver according to claim 4, wherein said weighting unit multiplies an information signal by the weighting coefficient at the time of synchronous detection, thereby weighting the output.

6. A CDMA receiver according to claim 4, wherein said weighting unit multiplies the detection signal, which prevails after synchronous detection, by a weighting coefficient, thereby weighting the output signal.

15 7. A CDMA receiver according to claim 1, wherein when  
reception power is adopted as said signal component,  
said weighting unit averages information signals, which  
are contained in the received signal, over one or more  
slots, calculates reception power using the average  
20 value, decides a weighting coefficient based upon a  
difference or ratio between said reception power and a  
set power, which is said set level, and weights the  
output signal.

8. A CDMA receiver according to claim 1, further comprising:

a maximum-level detector for detecting a maximum level  $P_{max}$  of reception powers of respective ones of the paths when reception power is adopted as said signal

component; and

    a set-level updating unit for adopting a value, which is obtained by subtracting a set level  $\Delta Y$  from the maximum level  $P_{max}$ , as said set level.

5. 9. A CDMA receiver according to claim 1, further comprising:

    a minimum-level detector for detecting a minimum level  $P_{min}$  of reception powers of respective ones of the paths when reception power is adopted as said signal

10 component; and

    a set-level updating unit for adopting a value, which is obtained by adding a set level  $\Delta Z$  to the minimum level  $P_{min}$ , as said set level.

10. A CDMA receiver according to claim 1, wherein when

15 a SIR, which is a ratio between signal power and interference power, is adopted as said signal component, said weighting unit estimates the SIR of the assigned path, decides a weighting coefficient based upon a difference or ratio between said estimated SIR and a set

20 SIR, which is the set level, and weights the output signal.

11. A CDMA receiver according to claim 10, further comprising:

    an error-rate detector for detecting error rate of

25 discriminated data;

    a transmission power controller for controlling transmission power of a transmitter in such a manner that the estimated SIR becomes a reference SIR; and

a set-SIR updating unit for updating said set SIR when said reference SIR is updated in such a manner that the error rate becomes a set value.

12. A CDMA receiver according to claim 1, wherein when  
5 an average of absolute values of orthogonal signal  
components (I-signal component, Q-signal component) of a  
pilot signal contained in the received signal is adopted  
as said signal component, said weighting unit averages  
pilot signals over one or more slots, calculates an  
10 average of absolute values of said orthogonal signal  
components using said average value, decides a weighting  
coefficient based upon a difference or ratio between the  
average of said absolute signals and a set average,  
which is the set level, and weights the output signal.

15 13. A CDMA receiver according to claim 1, wherein when  
the larger of absolute values of orthogonal signal  
components (I-signal component, Q-signal component) of a  
pilot signal contained in the received signal is adopted  
as said signal component, said weighting unit averages  
20 pilot signals over one or more slots, decides a  
weighting coefficient based upon a difference or ratio  
between the larger absolute value of the orthogonal  
signals (I-signal component, Q-signal component) and a  
set absolute value, which is the set level, and weights  
25 the output signal.

14. A CDMA receiver according to claim 1, wherein the lower the transmission rate of a symbol becomes and the greater a spreading gain, the lower said set level is

made.

15. A CDMA receiver according to claim 1, further comprising a reception power calculation unit for multiplying the combined signal by the reciprocal of 5 maximum weighting among the weightings of respective paths, thereby calculating reception power.

16. A CDMA receiver according to claim 1, further comprising a searcher for detecting multipath, wherein said searcher decides a weighting coefficient applied to 10 an output signal of each path, and said weighting unit multiplies the output signal of each path by said weighting coefficient.

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